DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-023481
Date Inspected: 07-May-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name:	Pat Swain			**CWI Present:**	☑ Yes	☐ No		
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A	
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A	
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A	
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A	

Bridge No: 34-0006
Component: Tower

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

This QA Inspector observed ABF personnel working at the 9 meter level in an effort to weld the external diaphragm plates to the various shear plates and tower skin plates. This QA Inspector observed the following during the shift noted above.

This QA Inspector had observed ABF welding personnel working at weld joints #33 and #35 the previous day and was informed today that welding would continue at these locations. Weld joints #33 and #35 inside the center section to shear plates b2W and b2E. See photo below.

This QA Inspector observed ABF personnel setting up the induction heating equipment used to preheat the material at approximately 0700 hours and at approximately 0900 hours the minimum preheat temperature of 325°F was obtained and welding was started.

This QA Inspector observed ABF welding personnel Xiao Jian Wan (#9677) and Jin Quan Huang (#9340) working together as a team at joint # 33 and James Zhen (#6001) and Wai Kitlai (#2953) working as another team at joint # 35. It was observed that during breaks, such as the morning and lunch breaks, one team member would take over the duty of welding from the other in order to have continuous welding through break periods.

This QA Inspector randomly observed as QC Inspector Pat Swain verified the following Flux Cored Arc Welding (FCAW) parameters; at weld joint # 33 – 240 amperes and 23.4 volts at travel speed of 397 mm per minute to produce a heat input of 0.85Kj. This QA Inspector observed grinding continued at weld joint #35 due to welding on the bevel side of the joint in an effort to reduce the excessive root gap. At approximately 1030 hours this date QC Inspector Pat Swain informed this QA Inspector that he had re-inspected the fit up where the weld joint had been built up by welding using the Shielded Metal Arc Welding SMAW) process and ground to an acceptable configuration. This QA Inspector observed ABF welding personnel James Zhen (#6001) and Wai Kitlai (#2953) working together and performing FCAW at this location. QC Inspector Pat Swain informed this QA Inspector he had verified the welding parameters as follows; 250 amperes and 25 volts at a travel speed of 336 mm per minute to produce a heat input of 1.1 Kj per mm. The welding observed this date appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed welding had appeared to have stopped at approximately 1230 this date and that the induction heating equipment had been placed of the welding and was performing the 325°F post heating for 3 hours.

South Tower leg, Splice at the 51 meter elevation: This QA Inspector randomly observed the work in progress on the upper and lower Interior Corner Closure Splice Plates located at the B- C corner and C-D corner. During this shift the following was observed.

This QA Inspector randomly observed ABF welding personnel Salvador Sandoval (#2202) tack welding the upper and lower splice plates located at the B-C skin corner. This QA Inspector observed QC Inspector Steve Jensen verify the following FCAW parameters; 256 amperes and 22.1 volts at a travel speed of 100 mm per minute to produce a heat input of 3.39 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3. See photo below.

This QA randomly observed ABF welding personnel Richard Garcia (#5892) tack welding the upper and lower splice plates located at the C-D skin corner. This QA Inspector observed QC Inspector Steve Jensen verify the following FCAW parameters; 242 amperes and 21.6 volts at a travel speed of 105 mm per minute to produce a heat input of 2.98 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3.

Later in the shift this QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) started production welding on the upper half of the upper splice plate at the B-C corner and Richard Garcia (#5892) start production welding on the lower half of the lower splice plate at the C-D corner. This QA Inspector observed ABF welding personnel place induction heat blankets over the area production welding was performed at approximately 1400 hours this date to start the 300°F post heat for 3 hours.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted below there were no notable conversations.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer